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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,871	12/08/2003	Jobst U. Gellert	10984-1050	1170
26(11)	7590	02/28/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			KERNS, KEVIN P	
			ART UNIT	PAPER NUMBER
			1725	
DATE MAILED: 02/28/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/728,871	GELLERT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin P. Kerns	1725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15 is/are rejected.
- 7) ☒ Claim(s) 13,14,16 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 and 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/22/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 5, 7-9, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gellert (US 4,648,546) in view of Juliano et al. (US 5,973,296), and further in view of Kitaichi et al. (US 5,569,474).

Gellert teaches an injection molding apparatus that includes a melt distribution manifold with at least one melt passage and injection nozzles with melt bores for conveying melt to mold cavities that are in communication with the nozzles. The manifold includes a wire type heater to provide heat to the melt passage of the manifold.

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(column 1, lines 7-12; column 3, lines 33-39; and column 4, lines 27-38). Gellert does not teach a planar film heater on the outside surface of the manifold or its characteristics.

However, Juliano et al. teach a film heater for an injection mold nozzle. Juliano et al. review prior art wire heaters, note their disadvantages, and propose that their film heater is advantageous because it provides more efficient external heating, it has better temperature control, it provides increased flexibility for heater element design, and allows integration of sensors, such as thermocouples, in the heating element. The heater includes a dielectric layer and an outer glaze layer. Juliano et al. teach that the film heater can be disposed on the inside surface or outside surface of the nozzle.

(column 1, lines 44-67; column 2, lines 1-8; column 3, lines 54-67; column 4, lines 1-9; column 5, lines 28-31; column 6, lines 37-63; and column 7, lines 15-23).

It would have been obvious to one of ordinary skill in the art at the time that the applicants' invention was made to have modified the apparatus of Gellert by the teachings of Juliano et al. One would have been motivated to replace the wire heater of Gellert with the film heater of Juliano et al., in order to provide more efficient external heating, provide better temperature control, provide increased flexibility for heater element design, and allow integration of sensors, such as thermocouples, in the heating element, as taught by Juliano et al. (Juliano et al.; column 1, lines 44-67; column 2, lines 1-8; column 3, lines 54-67; and column 4, lines 1-9).

Neither Gellert nor Juliano et al. discloses that the film heater is planar.

However, Kitaichi et al. disclose a mold for injection molding of plastics using a thin film electric heater, in which the thin film electric heater is generally planar and is located adjacent a mold cavity along a mold manifold structure, such that the planar portion of the thin film electric heater is advantageous for providing rapid surface heating for a mold used for injection molding of plastics, such that defects in the molded product occur less frequently (abstract; column 1, lines 7-8; column 3, lines 65-67; column 4, lines 1-5, 10-14, and 63-67; column 5, lines 1-28; column 6, lines 13-67; column 7, lines 1-29; column 9, lines 57-67; column 10, lines 1-59; column 11, lines 44-67; column 12, lines 1-6 and 32-46; and Figures 1-8).

It would have been obvious to one of ordinary skill in the art at the time that the applicants' invention was made to have modified the apparatus of Gellert by the teachings of Juliano et al., in order to provide more efficient external heating, provide better temperature control, provide increased flexibility for heater element design, and allow integration of sensors, such as thermocouples, in the heating element, and by further adding the planar film heater along a mold manifold, as disclosed by Kitaichi et al., in order to provide rapid surface heating for a mold used for injection molding of plastics, such that defects in the molded product occur less frequently (Kitaichi et al.; column 3, lines 65-67; column 4, lines 1-5 and 10-14; column 5, lines 12-28; column 9, lines 57-65; column 11, lines 52-67; and column 12, lines 1-6 and 32-46).

4. Claims 4, 6, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gellert (US 4,648,546) in view of Juliano et al. (US 5,973,296), and

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further in view of Kitaichi et al. (US 5,569,474), as applied to claims 1 and 7 above, and further in view of Godwin et al. (US 6,305,923).

Gellert (in view of Juliano et al., and further in view of Kitaichi et al.) disclose and/or suggest the features of claims 1 and 7 above. Neither Gellert, Juliano et al., nor Kitaichi et al. discloses a wire heater with the film heater.

However, Godwin et al. teach a molding system with a film heater. Godwin et al. also teach that an additional wire heater can be used at the exit of the manifold, where the manifold meets the nozzle. (column 2, lines 44-53; column 7, lines 1-5; column 9, lines 41-56; column 10, lines 21-22; column 12, lines 46-50; and Figure 20).

It would have been obvious to one of ordinary skill in the art at the time that the applicants' invention was made to have modified the apparatus described in paragraph 3 above by the teachings of Godwin et al. One would have been motivated to provide an additional wire heater at the exit of the manifold to ensure that melt leaving the manifold and entering the nozzle has not cooled undesirably and is at the proper temperature for injection into mold cavities. (Godwin et al.; column 2, lines 44-53; column 7, lines 1-5; column 9, lines 41-56; column 10, lines 21-22; and column 12, lines 46-50).

#### ***Allowable Subject Matter***

5. Claims 13, 14, 16, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest the elements of independent claim 1 and combined claims 7 and 15, respectively, in combination with a manifold heater plate that is made of a parent material that is at least partially infiltrated with a second material having a different thermal conductivity than the parent material (dependent claims 13 and 16).

#### ***Response to Arguments***

7. The examiner acknowledges the applicants' amendment, replacement drawing sheets, and an Information Disclosure Statement, all of which were received by the USPTO on December 22, 2004. The examiner also acknowledges the personal interview of December 17, 2004. The IDS has been considered and initialed, and a copy is provided with this Office Action. The replacement drawing sheets overcome the prior objection to the drawings. The applicants have added new claims 13-17. Claims 1-17 are currently under consideration in the application.

8. Applicants' arguments with respect to claims 1-12 (now claims 1-17) have been considered but are moot in view of the new ground(s) of rejection.

With regard to the applicants' remarks/arguments on pages 8-10 of the amendment, it is noted that the applicants' addition of the limitation "planar film heating

element" prompted a further search, and a new reference (Kitaichi et al.) has now been applied in the 35 USC 103(a) rejections in paragraphs 3 and 4 above.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. US 2,907,070, US 4,401,885, and US 6,405,785 (parent application) are also cited in PTO-892.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 2/20/05*  
Examiner  
Art Unit 1725

KPK  
kpk  
February 20, 2005